Program of the 16th Symposium on Polar Meteorology and Glaciology, held at the National Institute of Polar Research, Tokyo, August 4–5, 1993

I. Glaciology (Yutaka AGETA)

1. Glaciological observation carried out by JARE-33. Kokichi KAMIYAMA, Teruo FURUKAWA and Hideo MAENO.
2. Measurements of surface velocities of the ice sheet in Antarctica by differential GPS. Teruo FURUKAWA, Hideaki MOTOYAMA, Kazuo WATANABE, Kunihisa NAMASU, Fumihiko NISHIO and Okitsugu WATANABE.
3. Dielectric properties of ice at 5.6 and 9.7 GHz using cavity resonator. Takeshi MATSUOKA, Shuji FUJITA, Shigenori MORISHIMA and Shinji MAE.
4. Studies on glacier and ice sheet using SAR. Fumihiko NISHIO, Okitsugu WATANABE, Hajime ITO, Akira TAKAHASHI and Kohei CHO.
5. Dynamical behavior of the Shirase Glacier caused by a disintegration of the shelf ice. Masayoshi NAKAWO and Shinichi KAWAI.

II. Meteorology and Climatology (Katsuhiro KIKUCHI)

6. Growth process of ice crystals from frozen water droplets. Chuji TAKAHASHI and Masaru MORI.
7. On the formation of ride branches of deudritic ice crystals grown from the vapor. Takehiko GONDA and Makoto WADA.
8. Snow particle size distribution function at Syowa Station evaluated from VTR image. Masahiko HATANAKA, Yoshiyuki OHTA, Hiroshi TAKEYA, Akira NISHITSUJI and Makoto WADA.
9. Tropical influence on the South-Pacific double-jet variability. Akio KITO
10. On the meridional oscillation relationship between the polar sea ice in the Arctic and Antarctic. Simei XIE, Chenglan BAO, Chunjiang HAO, (NRCMEF, China).

III. Antarctic Climate Research (ACR) (Takashi YAMANOUCHI, Tetsuo OHATA and Masaaki WAKATSUCHI)

11. Antarctic climate research. Sadao KAWAGUCHI.
12. Variations of CO_2 concentration and the transport process over Syowa Station, Antarctica. Shohei MURAYAMA, Takakiyo NAKAZAWA, Masayuki TANAKA, Koji YAMAZAKI, Shuhji AOKI and Sadao KAWAGUCHI.
13. Effects of volcanic eruption on the Antarctic ozone hole. Masahiko HAYASHI, Yasunobu IWASAKA and Kunimoto IWAI.
14. Climate of Syowa Station –Evoluation of ACR period. Susumu KANETO and Takashi YAMANOUCHI.
15. Wind climatology of Antarctica by automatic weather station data. Tokio KIKUCHI and Tatsuo ENDOH.
16. Distribution of clouds and precipitations around Syowa Station for radar observation. Hiroyuki KONISHI.
17. Earth radiation budget in the Antarctic from satellite and surface observations. Takashi YAMANOUCHI.
18. Micrometeorological observation over the sea ice in Ongul Strait near Syowa Station. Kiyotaka NAKAGAWA.
19. Polynyas in the Cosmonaut Sea –We have two Cosmonaut Polynyas? – . Takatoshi TAKIZAWA, Kay I. OHSHIMA, Shuki USHIO, Toshiyuki KAWAMURA and Hiroyuki ENOMOTO.
20. Characteristics of the Antarctic coastal water and Antarctic coastal current off the Enderby Land, and its seasonal variabilities. Kay I. OHSHIMA, Takatoshi TAKIZAWA, Shuki USHIO, Toshiyuki KAWAMURA and Takuya MIYAKAWA.

21. Sea ice in Lützow-Holm Bay (II) –Its structure and growth processes–. Toshiyuki KAWAMURA, Kay I. OHSHIMA, Shuki USHIO and Takatoshi TAKIZAWA.
22. Seasonal cycle of atmosphere/sea ice interaction over the Antarctic Ocean deduced from SSM/I sea ice data sets. Tetsuzo YASUNARI, Tomoyuki OSHIYAMA, Hiroyuki ENOMOTO and Nobuo ONO.

IV. Poster Session A (ACR)

23. Climatic records in ice cores from Asuka area. Nobuhiko AZUMA, Hayato YAMAGUCHI, Kumiko GOTO-AZUMA, Masayoshi NAKAWO and Okitsugu WATANABE.
24. Variations of atmospheric CO_2 and CH_4 concentrations at Syowa Station. Shuhji AOKI and Takakiyo NAKAZAWA.
25. Seasonal variation of concentrations of methanesulfonic acid and non-sea-salt sulfate in the atmosphere over Antarctica. Shigeru TANAKA, Hisashi ISHIKAWA, Hironobu MURAMATSU and Masahiko HAYASHI.
26. Transport processes of aerosols in the Antarctic stratosphere. Masahiko HAYASHI, Yasu-nobu IWASAKA.
27. Analysis of the data observational experiment of the Antarctic ozone hole of 1991 under the Polar Patrol Balloon (PPB) project. Hiroshi KANZAWA, Masahiko HAYASHI, Isao MURATA and Koji YAMAZAKI.
28. A qualitative assessment of the height dependent interannual variability of polar stratospheric ozone at the poleward side of the southern vortex jet core. Hartwig GERNANDT. Klaus DETHLOFF and Hiroshi KANZAWA.
29. Measurements of NO_2 and O_3 at Syowa Station. Yutaka KONDO, W. A. MATTHEWS, Makoto KOIKE, Hideaki NAKAJIMA, Kenta TSUKUI, Masahiko HAYASHI, Takashi YAMANOUCHI and Shuhji AOKI.
30. Infrared absorption measurement at Syowa Station. Isao MURATA, Kazuyuki KITA, Naomoto IWAGAMI and Toshihiro OGAWA.
31. UV-B observation at Syowa Station. Masamichi AONO, Takayuki KISHI and Takashi YAMANOUCHI.
32. Wind characteristics of Syowa and Asuka. Kazumasa MATSUHARA, Susumu KANETO and Hiroshi IGARASHI.
33. Regional observation by AWS in ACR project. Tatsuo ENDOH.
34. Seasonal variation of clouds liquid at Syowa Station. Makoto WADA.
35. On the estimation of precipitation rate at each altitude by a new analytical method for the meteorological radar echo (3). Masahiko HATANAKA, Hiroshi TAKEYA, Akira NISHITSUJI, Mitsuo HOSHIYAMA and Makoto WADA.
36. The relationships between the thermal belt on the slope of ice sheet at Sôya Coast and the surface inversion layer over Syowa Station. Kiyotaka NAKAGAWA and Hiroko SHIMODORI.
37. A comparison of observation with modeling for albedo and transmittance of snow. Teruo AOKI, Tadao AOKI, Masashi FUKABORI and Katsumoto SEKO.
38. Water structures of coastal polynyas in Lützow-Holm and Breid Bays. Shuki USHIO, Takatoshi TAKIZAWA, Kay I. OHSHIMA and Toshiyuki KAWAMURA.
39. Snow cover on fast ice in the Lützow-Holm Bay during ACR program. Takatoshi TAKIZAWA, Shuki USHIO, Kay I. OHSHIMA and Toshiyuki KAWAMURA.
40. Sea ice in Ongul Strait –Growth processes and major ion concentrations–. Toshiyuki KAWAMURA, Kay I. OHSHIMA, Shuki USHIO and Takatoshi TAKIZAWA.
41. Current variabilities under fast ice in the Lützow-Holm Bay, Antarctica –Comparison between observations and model–. Kay I. OHSHIMA, Toshiyuki KAWAMURA, Takatoshi TAKIZAWA and Shuki USHIO.
42. The variation features of the Antarctic sea ice. Simei XIE, Chunjiang HAO, Ping QIAN, and Lin ZHANG.
43. Continuos analysis of sea ice image. Ken-ichiro MURAMOTO, Kohki MATSUURA, Makoto TAKIGAWA, Tatsuo ENDOH and Nobuo ONO.

V. Transportation of Minor Constituents and Ice Core I (Hiroshi TANAKA)

44. Transportation process of atmospheric CO_2 to the Antarctic. Kikuo KATO.
45. Distributions and trends of atmospheric CFCs and halons in the Northern and Southern Hemispheres. Yoshihiro MAKIDE and Takeshi TOMINAGA.
46. Measurement and collection of sulfur compounds on board the Shirase. Seizi KOGA, Ippei NAGAO, Shuhji AOKI, Hiroshi TANAKA, Kikuo OKADA and Hideaki MOURI.
47. Aerosol optical depth observations from Japan to Antarctica. Takayuki KISI, Meteorological Staff of 33rd JARE and Meteorological Staff of 34th JARE.
48. Behavior of nitrate aerosols in the Antarctic troposphere. Masahiko HAYASHI and Yasu-nobu IWASAKA.
49. Chemical compositions of snow and atmospheric aerosol in Antarctica. Okitsugu WATANABE, Hideaki MOTOYAMA, Satoru KANAMORI, Nobuko KANAMORI and Kenji YOSHIKAWA.

VI. Transportation of Minor Constituents and Ice Core II (Takeo HONDOH)

50. Ion-flux onto Antarctic ice sheet revealed from ice cores. Yoshiyuki FUJII, Kokichi KAMIYAMA, Okitsugu WATANABE, Hitoshi SHOJI and Satoru KANAMORI.
51. Concentration variations of greenhouse gases in the Holocene deduced from the Mizuho ice core, Antarctica. Takakiyo NAKAZAWA, Toshinobu MACHIDA, Masayuki TANAKA, Shuhji AOKI, Yoshiyuki FUJII and Okitsugu WATANABE.
52. Identification of annual layers by chemical analyses with a 10 m Dome C core. Kazuki NAKAMURA, Yutaka AGETA, Masayoshi NAKAWO and Kumiko GOTO-AZUMA.
53. Measurement of diffusion coefficient of gas molecules in ice. Koichi SATOH, Tsutomu UCHIDA, Takeo HONDOH and Shinji MAE.
54. Air babble volumes during snow densification. Takao KAMEDA and Renji NARUSE.
55. Crystal growth process of air-hydrates in ice sheets. Tsutomu UCHIDA, Shinji MAE, Takeo HONDOH, V.Ya. LIPENKOV, Paul DUVAL and Jun-ichi KAWABATA.

VII. Poster Session B (Geochemistry, Ice core, Observation method, model, Snow and ice engineering)

56. Mechanizm of the acceleration effect of freezing process on the chemical reactions. Norimichi TAKENAKA, Tohru DAIMON, Akihiro UEDA, Hiroshi BANDOW and Yasuaki MAEDA.
57. Snow chemistry in inland region, Antarctica. Kokichi KAMIYAMA. Hideaki MOTOYAMA and Yoshiyuki FUJII.
58. Continuous optical analyses of a 100 m ice core from Asuka Station. Tomokuni MATSUDA, Hidekatsu HARA, Hayato YAMAGUCHI, Nobuhiko AZUMA, Masayoshi NAKAWO and Kumiko GOTO-AZUMA.
59. SEM observations of volcanic ash at 500 m depth in the Mizuho ice core. Akira HIGASHI, Yoshiyuki FUJII and Satoshi TAKEYA.
60. Measurements of coordination number in G 6 core, Antarctica. Kazuyuki ARATANI, Katutosi TUSIMA and Hitoshi SHOJI.
61. Selection of bore hole-liquid for Dome-F Project. Tomomi YAMADA, Shuji FUJITA, Renji NARUSE, Shinji MAE, Nobuhiko AZUMA and Yoshiyuki FUJII.
62. Antarctic Dome-F ice sheet measurements using snowmobile radio echo sounder. Hideo MAENO, Kokichi KAMIYAMA, Teruo FURUKAWA, Okitsugu WATANABE, Renji NARUSE, Ken'ichi OKAMOTO, Takeshi SUITZ and Seiho URATSUKA.
63. Precise measurement on the dielectric anisotropy in ice Ih at 35 GHz using and open microwave resonator. Shigenori MORISHIMA, Shuji FUJITA, Takeshi MATSUOKA and Shinji MAE.
64. Physical properties of the shallow depth of the Antarctic Ice Sheet detected by SSM/I data. Shuji FUJITA, Ayako SATOH and Shinji MAE.
65. High resolution ice echo sounder for observing ice sheet. Takashi Suitz, Ken'ichi OKAMOTO, Seiho URATSUKA and Akira TAKAHASHI.
66. Distribution of surface condition of ice sheet in Antarctica. Teruo FURUKAWA, Kokichi KAMIYAMA, Hideo MAENO and Yutaka AGETA.

67. Fundamental experiment of the detecting of sea ice thickness by UHF waves. Hayao TAKASHIMA, Hisao YAMAKOSHI, Toshio MAEDA and Akio SAKURAI.
68. Textural analyses of ice core by image processing. Hidekazu IMAI, Kazumi KOTANI, Morimasa TAKADA and Nobuhiko AZUMA.
69. Automatic analyzing system of ice-fabric using color image processing. Hidekatsu HARA, Yuiti MARUHASHI and Nobuhiko AZUMA.
70. Application of image compression techniques to satellite data brouse system. Tokio KIKUCHI.
71. A computer simulation of the two and three dimensional ice sheet dynamics model. Shinichi KAWAI and Masayoshi NAKAWO.
72. Nonlinearities of the climatic change in the time series of temperature from Vostok ice core. Miki ARAI.
73. Creep test of ice dome models under a symmetrical and concentrated loading. Shinya KIMIZUKA, Toshio HANNUKI, Keita TSUKUI and Kenji ISHIZAWA.
74. On the growing snow drift around Asuka Camp in Antarctica. Minoru YAMANASHI, Toshio HANNUKI, Kenji ISHIZAWA and Masashi SANO.

VIII. Poster session C (Observations in the Arctic)

75. Lidar measurements on the polar atmosphere at Alaska –Transport of aerosols and polar vortex. Yasunobu IWASAKA, Katsuji MATSUNAGA, Takashi SHIBATA, Masahiko HAYASHI, Yasuhiro MURAI, Ikuko MORI, Masahiro NAGATANI, Hiroshi NAKATA, Motoo FUJIWARA and Hideharu AKIYOSHI.
76. Lidar measurements on the polar atmosphere at Alaska –Topics in 1993–. Takashi SHIBATA, Yasu-nobu IWASAKA, Katsuji MATSUNAGA, Masahiko HAYASHI, Tetsuro OJIO, Yasuhiro MURAI, Masahiro NAGATANI, Hiroshi NAKATA and Hideaki NAKANE.
77. Measurements on aerosols collected at Alaska in winter of 1991/1992, 1993. Yasuhiro MURAI. Yasu-nobu IWASAKA, Katsuji MATSUNAGA, Ikuko MORI, Masahiro NAGATANI, Hiroshi NAKATA, Satoru KANAMORI and Nobuko KANAMORI.
78. FTIR observation of the Arctic stratospheric ozone layer in Spring 1993. Yukio MAKINO, Shigeru CHUBACHI, Toru SASAKI, Tomoyuki TSUTSUMI, H. FAST and Kouji KONDO.
79. The rate of change of total ozone by TOMS (Ver. 6) data in the Far East. Shigeru CHUBACHI.
80. Mechanical tests on the Dome GRIP ice core. Atsushi MIYAMOTO, Keiji SAKURADA, Hitoshi SHOJI and Henric B. CLAUSEN.
81. Annual accumulation rate on Snøfjellafonna ice field, western Spitsbergen. Takao KAMEDA, Shuhei TAKAHASHI, Kumiko GOTO-AZUMA, Shiro KOSHIMA, Kaoru IZUMI and Okitsugu WATANABE.
82. Past 200-year aciditification revealed from arctic ice cores. Yoshiyuki FUJII, Kokichi KAMIYAMA, Okitsugu WATANABE, Keisuke SUZUKI and Takao KAMEDA.
83. Vertical distributions of polynuclear aromatic hydrocarbons in the ice core from Site-J, Greenland. Kimitaka KAWAMURA, Ikuko SUZUKI, Yoshiyuki FUJII and Okitsugu WATANABE.
84. An ice core chemistry record from Snøfjellafonna, western Spitsbergen. Kumiko GOTO-AZUMA, Takao KAMEDA, Shiro KOHSHIMA, Shuhei TAKAHASHI and Okitsugu WATANABE.
85. Geographical distributions of formate and major ion concentration levels in Greenland ice cores. Kazuo OSADA and Chester C. LANGWAY, Jr.
86. Seasonal variation of low molecular weight Dicarboxylic Acid in the Arctic atmosphere. Hideki KASUKABE, Kimitaka KAWAMURA and L. A. BARRIE.
87. Observations of clouds and precipitation at Ny-Ålesund. Makoto WADA and Hiroyuki KONISHI.
88. Meteorological conditions on glaciers of western Spitsbergen in Svalbard. Shuhei TAKAHASHI, Takao KAMEDA, Shiro KOHSHIMA, Kumiko GOTO-AZUMA and Okitsugu WATANABE.
89. Influence of the polar air mass on the weather in northern Japan. Kunio RIKIISHI, Ryota AOKI and Shingo MIYAHATA.
90. The roll of Okhotsk sea ice and wind field concerned with air temperature variation in winter Hokkaido. Akiharu HONDA and Masaaki WAKATSUCHI.
91. Oceanographic environment in Fram Strait and Kongsfjorden. Shuki USHIO, Sakae KUDOH, Hajime ITO and Nobuo ONO.

92. About the delay of the last date of drift ice in sight of the Hokkaido coast during the 1992/93 season. Takenobu TOYOTA and Etsuro KAMIHIRA.
93. The features of the variation of the Arctic sea ice. Simei XIE, Chunjiang HAO and Tongjuan LI.
94. Interannual variability of sea-ice extent in the Northern Hemisphere. Nobuo ONO.
95. Coupled sea ice-ocean models of the Labrador and Newfoundland Shelves. Motoyoshi IKEDA.

XI. General Discussions

About Symposium and Proceedings.
Present status of Antarctic research expedition.
Present status of Arctic observation.
Future planning of the research and observation in the Antarctic and Arctic.